ABSTRACT OF THE DISCLOSURE

A vertical-cavity surface-emitting laser incorporating a supported air gap distributed Bragg reflector is disclosed. The supported air gap DBR includes a regrowth layer of material that provides mechanical support for the original material layers. The supported air gap DBR is fabricated by first growing alternating pairs of a first material and a sacrificial material over a suitable substrate. The layer pairs of the first material and sacrificial material are covered by a suitable dielectric material. The dielectric material is then selectively removed exposing regions of the first material and sacrificial material where selective regrowth of additional material is desired. The selective regrowth of the additional material provides mechanical support for the semiconductor material that remains after a selective etch removal of the sacrificial material.